

CONTACTLESS ENERGY TRANSFER APPARATUS

Abstract of the Disclosure

A flux generator base unit electromagnetically coupled with a receiving unit to transfer energy into the receiving unit. The base unit includes one or more permanent magnets that produce a magnetic flux, which passes through a receiver coil in the receiving unit. The receiver coil is either disposed in a separate housing that is electrically connected with a portable device, or integrated into the housing of the portable device. Either the permanent magnets or a flux shunt is moved in the base unit to produce the varying magnetic flux that is coupled to the receiver coil. As a result of the varying magnetic field experienced by the receiver coil, an electric current is induced in the receiver coil, which is conditioned (e.g., rectified, filtered, and regulated) by a conditioning circuit to charge a battery or energize electronics contained in the portable device. Various embodiments of both the base unit and receiving unit are disclosed, including “universal” base units suitable for operation with different size receiving units.